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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,159	10/31/2003	Daniel C. Conrad	US20010201	1600

7590 09/22/2006

WHIRLPOOL PATENTS COMPANY - MD 0750

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St. Joseph, MI 49085

EXAMINER

KHAN, AMINA S

ART UNIT

PAPER NUMBER

1751

DATE MAILED: 09/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/699,159

Applicant(s)

CONRAD ET AL.

Examiner

Amina Khan

Art Unit

1751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 79-83 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 79-83 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to applicant's amendments filed on June 26, 2006.
2. Claims 1-13 and 79-83 are pending. Claims 14-78 have been cancelled. Claims 1,3 and 10 have been amended. Claims 79-83 are new.
3. All previous rejections are withdrawn.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,2,6,79 and 81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Estes et al. (US 2002/0056164) in view of Haase (US 3,733,267).

Estes et al. teach methods of cleaning comprising delivering a substantially non-reactive, non-aqueous, non-oleophilic, apolar working fluid and at least one washing additive to fabrics in a wash container, applying mechanical energy to clothing and wash liquor, substantially removing the wash liquor from the fabric load (abstract), capturing and condensing the working fluid and filtering it (page 5, paragraph 0066), as

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claimed in claims 1 and 8. Estes further teaches that the working fluid has the following properties: surface tension of less than or equal to 35 dynes/cm²; a KB value of less than or equal to 30; and a solubility in water of less than about 10% (page 2, paragraph 0020), as claimed in claims 1 and 9. Estes further teaches that the cleaning compositions comprise washing adjuvants such as surfactants, enzymes, bleaches, deodorizers, fragrances, antistatic agents, and anti-stain agents (page 2, paragraph 0024), as claimed in claim 6. Estes et al. further teaches that the filtered fluid can be reused on fabrics (See Figure 8, #117, #118 and #108).

Estes et al. is silent as to the type of filter used in the filtration process and does not specifically teach cross membrane filters or adsorbent bed filters.

Haase teaches cross flow filters surrounded by clay-carbon absorbers (column 1, lines 1-20) for use in dry cleaning. Haase further teaches that these filter types are important in removing excess moisture in the cleaning liquid because water content can accumulate to deleterious levels in the cleaning fluid if not filtered (column 8, lines 50-68).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods taught by Estes et al. by incorporating the cross flow and adsorbent bed filters taught by Haase because the Haase teaches the moisture absorption benefits imparted by these filters to non-aqueous dry cleaning fluids in dry-cleaning applications. One of ordinary skill in the art would have been motivated to combine the teachings of the two references absent unexpected results.

5. Claims 8,9,82 and 83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Estes et al. (US 2002/0056164) in view of Radomyselski et al. (US 2003/0226214).

Estes et al. is relied upon as set forth above.

Estes et al. is silent as to the impurity level of the filtered working fluid.

Radomyselski et al. teaches methods of dry cleaning with non-aqueous fluids (page 2, paragraph 0027), comprising cleaning solvents such as hydrocarbons or silicone-containing solvents (column 2, paragraph 0032) and surfactants (page 10, paragraph 0142) or other cleaning adjuncts (page 17, paragraph 0171). Radomyselski et al. further teaches contacting fabrics with cleaning solvent followed by filtration of the solvent and reuse of the solvent (page 1, paragraphs 0012-0016). Radomyselski et al. further teaches that the filters may be dual filters such as absorbent and membrane filters (page 5, paragraphs 0065-0068), wherein the removal of contaminants can be 100% wherein 50-100% is sufficient (page 4, paragraph 0060).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods taught by Estes et al. to incorporate the contaminant removal levels and dual filters including absorbent type filters taught by Radomyselski et al. because Radomyselski et al. teaches the benefits of dual filtering in providing low contaminant levels thus enhanced cleaning in subsequent wash cycles (page 4, paragraph 0060).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the portion of the Radomyselski's contaminant removal range which is within the range of applicant's claims because it has been held to be

obvious to select a value in a known range by optimization for the best results. As to optimization results, a patent will not be granted based upon the optimization of result effective variables when the optimization is obtained through routine experimentation unless there is a showing of unexpected results which properly rebuts the *prima facie* case of obviousness. See *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). See also *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (Fed. Cir. 1990), and *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In addition, a *prima facie* case of obviousness exists because the claimed ranges "overlap or lie inside ranges disclosed by the prior art", see *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976; *In re Woodruff*, 919 F.2d 1575, 16USPQ2d 1934 (Fed. Cir. 1990). See MPEP 2131.03 and MPEP 2144.05I.

6. Claims 5,7 and 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Estes et al. (US 2002/0056164) in view of Haase (US 3,733,267) as applied to the claims above, and further in view of Radomyselski et al. (US 2003/0226214).

Estes et al. and Haase are relied upon as set forth above.

Estes et al. and Haase are silent as to the impurity level of the filtered working fluid and the HLB of the surfactants.

Radomyselski et al. teaches dry cleaning methods comprising filters may be dual filters such as absorbent and membrane filters (page 5, paragraphs 0065-0068), wherein the removal of contaminants can be 100% wherein 50-100% is sufficient (page 4, paragraph 0060). Radomyselski et al. further teaches the use of Neodol®

surfactants, which have HLB's in the range of 8-15, as conventional components in dry cleaning operations (page 10, paragraph 0140).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods taught by Estes et al. and Haase to incorporate the contaminant removal levels and surfactants taught by Radomyselski et al. because Radomyselski et al. teaches the benefits in providing low contaminant levels in dry cleaning fluids for the purpose of reuse and thus enhanced cleaning in subsequent wash cycles (page 4, paragraph 0060). Radomyselski et al. further teaches the conventionality of surfactants of the claimed HLB range in dry-cleaning methods.

It is prima facie obvious to combine the references, each taught for the same purpose, to yield a third composition for that very purpose. *In re Kerkhoven*, 205 USPQ 1069, *In re Pinten*, 173 USPQ 801, and *In re Susi*, 169 USPQ 423 when ingredients are well known and combined for their known properties, the combination is obvious absent unexpected results. A person of ordinary skill in the dry cleaning art would expect combinations of these materials to behave in the same fashion as the individual materials, absent unexpected results.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the portion of the Radomyselski's contaminant removal range which is within the range of applicant's claims because it has been held to be obvious to select a value in a known range by optimization for the best results. As to optimization results, a patent will not be granted based upon the optimization of result effective variables when the optimization is obtained through routine experimentation

unless there is a showing of unexpected results which properly rebuts the *prima facie* case of obviousness. See *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). See also *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (Fed. Cir. 1990), and *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In addition, a *prima facie* case of obviousness exists because the claimed ranges "overlap or lie inside ranges disclosed by the prior art", see *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976; *In re Woodruff*, 919 F.2d 1575, 16USPQ2d 1934 (Fed. Cir. 1990). See MPEP 2131.03 and MPEP 2144.05I.

7. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Estes et al. (US 2002/0056164) in view of Radomyselski et al. (US 2003/0226214) as applied to the claims above, and further in view of Haase (US 3,733,267).

Estes et al. and Radomyselski et al. are relied upon as set forth above.

Estes et al. and Radomyselski et al. do not teach cross membrane filters.

Haase teaches cross flow filters surrounded by clay-carbon absorbers (column 1, lines 1-20) for use in dry cleaning. Haase further teaches that these filter types are important in removing excess moisture in the cleaning liquid because water content can accumulate to deleterious levels in the cleaning fluid if not filtered (column 8, lines 50-68).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods taught by Estes et al. Radomyselski et al. by incorporating the cross flow and adsorbent bed filters taught by Haase because the

Haase teaches the moisture absorption benefits imparted by these filters to non-aqueous dry cleaning fluids in dry-cleaning applications. Furthermore Radomyselski et al. invites the inclusion of dual filters. One of ordinary skill in the art would have been motivated to combine the teachings of the two references absent unexpected results.

8. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Estes et al. (US 2002/0056164) in view of Haase (US 3,733,267) as applied to the claims above, and further in view of Berndt et al. (US 6,059,845).

Estes et al. and Haase are relied upon as set forth above.

Estes et al. and Haase do not teach spinning discs.

Berndt et al. teach methods of dry cleaning comprising placing articles in a rotating cleaning basket, adding Class 3-A type solvents, specifically siloxane, agitating articles in solvent, extracting the solvent, recovering condensed vapors and filtering the solvent using a diatomaceous earth type in combination with a spin disc (column 3, line 30 to column 4, line 29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods taught by Estes et al. and Haase to incorporate the spin discs taught by Berndt et al. because Berndt et al. teaches the benefits of utilizing spin discs in combination with Class 3-A solvents for effectively dry cleaning fabrics.

9. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Estes et al. (US 2002/0056164) in view of Radomyselski et al. (US 2003/0226214) as applied to the claims above, and further in view of Berndt et al. (US 6,059,845).

Estes et al. and Radomyselski et al. are relied upon as set forth above.

Estes et al. and Radomyselski et al. do not teach cross membrane filters.

Berndt et al. teach methods of dry cleaning comprising placing articles in a rotating cleaning basket, adding Class 3-A type solvents, specifically siloxane, agitating articles in solvent, extracting the solvent, recovering condensed vapors and filtering the solvent using a diatomaceous earth type in combination with a spin disc (column 3, line 30 to column 4, line 29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods taught by Estes et al. and Radomyselski et al. to incorporate the spin discs taught by Berndt et al. because Berndt et al. teaches the benefits of utilizing spin discs in combination with Class 3-A solvents for effectively dry cleaning fabrics.

10. Claims 1,2,6,79 and 81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Estes et al. (US 2002/0056164) in view of Ehrnsperger et al. (US 6,855,173).

Estes et al. teach methods of cleaning comprising delivering a substantially non-reactive, non-aqueous, non-oleophilic, apolar working fluid and at least one washing additive to fabrics in a wash container, applying mechanical energy to clothing and

wash liquor, substantially removing the wash liquor from the fabric load (abstract), capturing and condensing the working fluid and filtering it (page 5, paragraph 0066), as claimed in claims 1 and 8. Estes further teaches that the working fluid has the following properties: surface tension of less than or equal to 35 dynes/cm²; a KB value of less than or equal to 30; and a solubility in water of less than about 10% (page 2, paragraph 0020), as claimed in claims 1 and 9. Estes further teaches that the cleaning compositions comprise washing adjuvants such as surfactants, enzymes, bleaches, deodorizers, fragrances, antistatic agents, and anti-stain agents (page 2, paragraph 0024), as claimed in claim 6. Estes et al. further teaches that the filtered fluid can be reused on fabrics (See Figure 8, #117, #118 and #108).

Estes et al. is silent as to the type of filter used in the filtration process and does not specifically teach cross membrane filters or adsorbent bed filters.

Ehrnsperger et al. teaches dry cleaning methods comprising filtering water out from lipophilic fluids wherein absorbent materials that selectively absorb water without absorbing lipophilic fluids are used for the filtering (column 2, lines 63-68). Ehrnsperger et al. further teaches that membrane spacers are dispersed inside the absorbent materials (column 18, lines 25-30). Ehrnsperger et al. further teaches that cross-flow velocity for filtration is important for the process (column 18, lines 40-45). Ehrnsperger et al. further teaches absorbent filters are also useful in separation of liquids and have regeneration capacity (column 19, lines 40-55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods taught by Estes et al. by incorporating the

cross membrane and absorbent bed filters taught by Ehrnsperger et al. because the Ehrnsperger et al. teaches facilitation of lipophilic fluid recovery imparted by these filters in recycling non-aqueous dry cleaning fluids in dry-cleaning applications. One of ordinary skill in the art would have been motivated to combine the teachings of the references absent unexpected results.

11. Claims 5,7 and 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Estes et al. (US 2002/0056164) in view of Ehrnsperger et al. (US 6,855,173) as applied to the claims above, and further in view of Radomyselski et al. (US 2003/0226214).

Estes et al. and Ehrnsperger et al. are relied upon as set forth above.

Estes et al. and Ehrnsperger et al. are silent as to the impurity level of the filtered working fluid and the HLB of the surfactants.

Radomyselski et al. teaches dry cleaning methods comprising filters may be dual filters such as absorbent and membrane filters (page 5, paragraphs 0065-0068), wherein the removal of contaminants can be 100% wherein 50-100% is sufficient (page 4, paragraph 0060). Radomyselski et al. further teaches the use of Neodol® surfactants, which have HLB's in the range of 8-15, as conventional components in dry cleaning operations (page 10, paragraph 0140).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods taught by Estes et al. and Ehrnsperger et al. to incorporate the contaminant removal levels and surfactants taught by Radomyselski

et al. because Radomyselski et al. teaches the benefits in providing low contaminant levels in dry cleaning fluids for the purpose of reuse and thus enhanced cleaning in subsequent wash cycles (page 4, paragraph 0060). Radomyselski et al. further teaches the conventionality of surfactants of the claimed HLB range in dry-cleaning methods.

It is prima facie obvious to combine the references, each taught for the same purpose, to yield a third composition for that very purpose. *In re Kerkhoven*, 205 USPQ 1069, *In re Pinten*, 173 USPQ 801, and *In re Susi*, 169 USPQ 423 when ingredients are well known and combined for their known properties, the combination is obvious absent unexpected results. A person of ordinary skill in the dry cleaning art would expect combinations of these materials to behave in the same fashion as the individual materials, absent unexpected results.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the portion of the Radomyselski's contaminant removal range which is within the range of applicant's claims because it has been held to be obvious to select a value in a known range by optimization for the best results. As to optimization results, a patent will not be granted based upon the optimization of result effective variables when the optimization is obtained through routine experimentation unless there is a showing of unexpected results which properly rebuts the *prima facie* case of obviousness. See *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). See also *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (Fed. Cir. 1990), and *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In addition, a *prima facie* case of obviousness exists because the claimed ranges "overlap

or lie inside ranges disclosed by the prior art", see *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976; *In re Woodruff*, 919 F.2d 1575, 16USPQ2d 1934 (Fed. Cir. 1990). See MPEP 2131.03 and MPEP 2144.05I.

12. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Estes et al. (US 2002/0056164) in view of Radomyselski et al. (US 2003/0226214) as applied to the claims above, and further in view of Ehrnsperger et al. (US 6,855,173).

Estes et al. and Radomyselski et al. are relied upon as set forth above.

Estes et al. and Radomyselski et al. do not teach cross membrane filters.

Ehrnsperger et al. teaches dry cleaning methods comprising filtering water out from lipophilic fluids wherein absorbent materials that selectively absorb water without absorbing lipophilic fluids are used for the filtering (column 2, lines 63-68). Ehrnsperger et al. further teaches that membrane spacers are dispersed inside the absorbent materials (column 18, lines 25-30). Ehrnsperger et al. further teaches that cross-flow velocity for filtration is important for the process (column 18, lines 40-45). Ehrnsperger et al. further teaches absorbent filters are also useful in separation of liquids and have regeneration capacity (column 19, lines 40-55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods taught by Estes et al. Radomyselski et al. by incorporating the cross membrane and absorbent bed filters taught by Ehrnsperger et al. because the Ehrnsperger et al. teaches facilitation of lipophilic fluid recovery imparted by these filters in recycling non-aqueous dry cleaning fluids in dry-cleaning

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applications. One of ordinary skill in the art would have been motivated to combine the teachings of the references absent unexpected results.

13. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Estes et al. (US 2002/0056164) in view of Ehrnsperger et al. (US 6,855,173) as applied to the claims above, and further in view of Berndt et al. (US 6,059,845).

Estes et al. and Ehrnsperger et al. are relied upon as set forth above.

Estes et al. and Ehrnsperger et al. do not teach spinning discs.

Berndt et al. teach methods of dry cleaning comprising placing articles in a rotating cleaning basket, adding Class 3-A type solvents, specifically siloxane, agitating articles in solvent, extracting the solvent, recovering condensed vapors and filtering the solvent using a diatomaceous earth type in combination with a spin disc (column 3, line 30 to column 4, line 29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods taught by Estes et al. and Ehrnsperger et al. to incorporate the spin discs taught by Berndt et al. because Berndt et al. teaches the benefits of utilizing spin discs in combination with Class 3-A solvents for effectively dry cleaning fabrics.

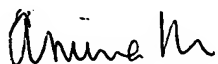
14.

Conclusion

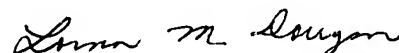
15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amina Khan whose telephone number is (571) 272-5573. The examiner can normally be reached on Monday through Friday, 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on (571) 272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Amina Khan
Patent Examiner
September 18, 2006



LORNA M. DOUYON
PRIMARY EXAMINER